

[illegible]

## ABSTRACT

A supermicrocellular foamed material and a method for producing such material, the material to be foamed such as a polymerplastic material, having a supercritical fluid, such as carbon dioxide in its supercritical state, introduced into the material to form a foamed fluid/-material system having a plurality of cells distributed substantially throughout the material. Cell densities lying in a range from about  $10^9$  to about  $10^{15}$  per cubic centimeter of the material can be achieved with the average cell sizes being at least less than 2.0 microns and preferably in a range from about 0.1 micron to about 1.0 micron.